

# LETTERS

## The "Recce Stryker" — Making a Good Vehicle Great

Dear Sir:

I have been reading *ARMOR* since becoming a cavalry scout years ago. Your coverage of the Stryker Brigade Combat Team (SBCT) from its inception has been exceptional. Most of the press thus far has focused on the base vehicle, the infantry carrier, and the mobile gun system (MGS). What about the scout version? What is the news coming from 1-14th Cavalry, the reconnaissance, surveillance, and target acquisition (RSTA) squadron? The MGS is the domain of 19Ks and armor officers, what are the 19Ds and cavalry officers doing?

I've read the new Reconnaissance Handbook (ST 3-20.983), and its description of the new "recce platoon." Having served in HMMWV-equipped scout platoons of mechanized and armor units and now in a brigade reconnaissance troop (BRT), I can appreciate some fixes the recce platoon has made to the way non-Bradley-equipped scouts do business:

- Having a dedicated dismount force. The ability to maneuver vehicles and have scouts on the ground is priceless. This "fix" undoubtedly comes from many frustrated former scout platoon leaders and platoon sergeants who have had to juggle crews and duties just to send out patrols.
- Having a vehicle with better cross-country mobility and sprinting ability than a HMMWV. While the Stryker cannot maneuver like a Bradley off road, its eight-wheeled mobility and high-speed sprinting ability are significant upgrades over the often-mired M1114 and easily high-centered or broke M1025/1026 HMMWVs that struggle with terrain at anything more than low speed. For the nonbelievers, try negotiating through the rock fields of the National Training Center without breaking a half-shaft or blowing a tire.
- Having the primary weapon tied into the sight system. With a controlled system, precise long-range fire is now more of a reality. Having a thermal sight like the long-range advanced scout surveillance system (LRAS3) is great, but laying direct fires is difficult because the sight and weapon are not integrated. Yes, I know scouts, particularly HMMWV-equipped scouts, should not be engaging targets at anything but point-blank range, but there is confidence in knowing you can reliably kill what you see. A confident scout is a better scout, because it's his skin on the line, not the doctrine writer's.

These fixes are terrific. I hope they will be made possible for the rest of the cavalry community. I do, however, recommend the following changes/additions:

- Give the recce Stryker an erectable mast-mounted thermal sight similar to the Dutch/German Fennek recon vehicle. Whether in Kuwait peeking over IV-lines or in the Bavarian forests scanning from a vehicle defilade, the idea has merit. Performing recon-

naissance and/or surveillance without exposing the vehicle is an ability not enjoyed since the M901 improved TOW vehicle-equipped platoons of the late 1980s. This should be re-introduced to the force.

- Ensure the ranking scout on the vehicle is in charge of the vehicle. Student Text (ST) 20.983 leads me to believe platoon leaders, platoon sergeants, and section leaders are dismounts and the vehicle's tactical placement and route selection is left to a sergeant. While many sergeants are up to the task, the platoon leaders are more experienced and should be deciding such things when it comes to maneuver. I'm sure this is already the case, but it is something that needs to be changed in the manual.
- Give the recce Stryker and the infantry carrier an antitank guided missile (ATGM) capability such as a Javelin or tube-launched, optically tracked wire-guided (TOW) missile. The infantry company that went to the National Training Center last year as part of the Millennium Challenge exercise had their dismounts in the hatches with their Javelins. This proves a mounted ATGM requirement exists. Such a system should run off of vehicle power to avoid any additional logistics strain. Also, such a system should be controlled from within the vehicle by the gunner for the same reason the primary weapons system is — to protect the crew.

In closing, these recommendations by a mere staff sergeant are cost-effective and doable. None require a vehicle overhaul or reexamining unit SOPs. They are simple ways to make a good vehicle and a good unit even better. I hope the generals and colonels, the ones who really make the decisions on such things, agree. I also hope they apply some of the "fixes" discussed to the non-Bradley scouts as well; we could certainly use the help, especially in the form of dismounts. Finally, I hope this letter stimulates some discussion and responses by those in the RSTA squadrons who are making thoughts and theories into reality. It is their words that are valued most.

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## A Son's Tribute

Dear Sir:

I was recently speaking with my father, Richard W. Drebus, the evening before he faced serious cancer surgery at the Mayo Clinic. Of all the things we could have discussed, he chose to express indignation about an article published in his local Oshkosh, Wisconsin, newspaper. The article related how a member of the Wisconsin National Guard had participated in local war protests and had publicly spoken disparagingly about his commander in chief and his government. It was beyond my father's comprehension how a "soldier" could take an oath to serve his country and in the same breath mock that oath.

You should know that my father is a veteran. Not the type of veteran whose image the press conjures up — disheveled, unbalanced, and bitter about wounds received and sacrifices unappreciated. No, he is the type of veteran of whom the public is often unaware — those who did their service willingly and used that service to make a better life for themselves and their families.

Enlisting in the Army in 1943 at the age of 19, my father was sent to Europe with the 11th Armored Division in time to be thrown into combat against Hitler's last major offensive, today known as the Battle of the Bulge. A Private First Class infantryman, he encountered German Tiger tanks in the bitter Belgian winter. His rifle was no contest for their armor and machine guns and although seriously wounded, he survived and received the Bronze Star and Purple Heart.

Following the war, my father took advantage of veteran's educational benefits and went on to earn a PhD, followed by a long successful career in international business, and retired as a senior executive for one of the nation's largest pharmaceutical firms. Despite all of his civilian accomplishments, however, he has always been proudest of his service as a soldier. He passed this pride on to his children who he encouraged to serve in the Armed Forces.

My older brother served as an enlisted soldier with a tour in Vietnam, followed by duty in Germany. One year my parents traveled to Landstuhl, Germany to join his unit for Thanksgiving dinner. They also visited my family when we were stationed at Baumholder, Germany, and they were thrilled at the opportunity to observe my battalion's tank gunnery training at Grafenwoehr training center. My father never missed an opportunity to visit open houses at nearby military bases and he paid us frequent visits when we were living at Fort Knox. A long time member of the Armor Association, he enjoys reading *ARMOR* Magazine and even attended an Armor Conference with me, including a visit to the Patton Museum. As can be expected, he prefers looking at tanks from the friendly end of the barrel!

Understanding a soldier's sense of duty, my father has shared war stories and wounds with former German enemies, now his friends and associates. He has continued to serve his country, allowing his name to be used in an Army television recruiting advertisement that scrolled the titles of prominent Americans who used GI bill benefits. During his travels around the world, he would often meet U.S. soldiers and would buy them a drink or dinner to show his appreciation for their service.

The ultimate irony is that the cancer my father is now battling will eventually achieve what the Tiger tanks could not. His illness is a result of Hepatitis C, a virus that was not identified by medical science until 1989, 48 years after the entry of the United States in World War II. The Department of Veterans Affairs has estimated that Hepatitis C affects perhaps hundreds of thousands of veterans and is

making major efforts to diagnose, research, and treat the illness. Since my father's periodic physical examinations showed evidence of an unidentified liver problem for more than 30 years, his doctors believe that he contracted the disease from the blood transfusions that saved his life on the battlefield so many years ago. He asked me recently to obtain information about the possibility of a final resting place at Arlington National Cemetery, an honor for which he qualifies.

No, not all veterans fit the stereotype that the press and films would lead the public to believe. My father's story of service is not unlike those of countless World War II veterans who not only served selflessly in uniform but continue to support our Armed Forces as private citizens. It is shameful that our nation is only now recognizing with a monument those who served and sacrificed during the defense of our freedom in the greatest conflict of human history. This is especially true for those who did not come home but who now rest in peaceful foreign fields or beneath silent ocean waves. On the other hand, perhaps their legacy of service and devotion to their country is their greatest monument.

JOHN R. DREBUS  
LTC, U.S. Army, Retired

## Modifying Existing Hardware to Create a Maneuver Simulation

Dear Sir:

One major challenge facing our combat leaders today is lack of "repetitions." In other words, they do not get enough practice to be proficient in combat tasks. A platoon leader may serve in his job for only 10 to 18 months, and a company commander may serve for only 18 months. During these short periods of troop leadership, these individuals will be lucky to maneuver their units in a tactical environment a handful of times. The battalion commander enjoys a longer tenure, but his opportunities for tactical employment are even slimmer. Practice or repetitions are needed to improve the odds of success in any venture. As we frequently chant but seldom practice, "rehearse, rehearse, and rehearse." With limited opportunities to maneuver, our leaders often learn their lessons in the field as opposed to before the training event. The end result is that the knowledge needed to succeed is obtained near the end of command tenure, when it is too late to use. One approach to remedying this problem is to increase the use of simulations in our training. This can be at the unit level, or as the new model of the captains' career course suggests, during required military education levels training.

The lack of training dollars and low operating tempo miles force us to look for other ways to train for combat. In an attempt to remedy this problem, the military has created simulations for tactical use, which provide leaders with the ability to gain repetitions, but are cost effective. Certainly simulators such as simulation network (SIMNET), Janus, brigade/battalion simulation (BBS), and others are effective train-

ing tools. These simulators are constantly improving in quality to allow us to approach real-life conditions. Despite the effectiveness of these trainers, the combat leaders at battalion and below still do not receive enough combat training and the training they do receive is often in high stress situations with officer evaluation reports on the line.

As previously mentioned, the Army's existing simulators are fantastic training tools. I have always left a simulation with more experience and a new lesson in tactics to digest. However, these simulators have some limitations. The biggest problem is the simulator's location. Often, to use one of the facilities, either the unit or the personnel who operate the facility must go TDY. One example of this is SIMNET. It is a superb tool but unless you are at Fort Knox or Vileseck, it is not readily available to you. To use this trainer requires months of planning and preparation, not to mention transportation costs. Another example is the BBS at Fort Polk. The facility is ready for use by local units, but it is unstaffed. Civilian operators must be flown in to allow its use. Again, this takes an enormous amount of planning and coordination. The overhead planning cost and the monetary cost of the training is certainly worth the experience, but a less painful solution is needed. Another drawback to current simulations is the design cycle. Given the legendary slowness of the procurement system, it is not possible to develop simulations that keep pace with modern PC capabilities. Sure, we occasionally replace simulations with things like the close combat tactical trainer (CCTT), but it has been a long and slow process. The civilian software community is better able to keep pace with technology in this regard. In units, it is well known that small blocks of time are often available in training schedules. These blocks of time could easily be turned into repetitions if a new simulator is developed. Imagine using the four hours during sergeants' time to run your platoon leaders through several iterations of battle drills or fight a company defense. What an opportunity!

So, where do we get this new simulator? The answer is that it must be developed. The first response to this may be that the development and fielding costs are prohibitive. However, we can combine existing commercial-off-the-shelf (COTS) items with new software. The COTS items are the numerous computers that exist in all units. The Army has done a wonderful job of equipping its units with PCs of all types. Very often these PCs are connected to a local area network (LAN). These PCs are capable of producing much more than briefing slides and memorandums. As existing PC games demonstrate, multiple PCs can be connected over a LAN to allow multiple-player access. This ability is exactly like the abilities of existing simulators and we already have it at battalion and below with no additional cost to the Army. Should a unit not possess a LAN connecting its units, then an Ethernet Hub and its connections can be obtained for less than \$100.

The PCs for the new simulator in a unit could be configured in one building or across the

unit's footprint. Even more, units connected to the Internet can train together despite geographical distance. Imagine a light infantry company at Fort Drum, New York, training with a cavalry unit at Fort Polk, Louisiana, with this simulator. Not only does this technology exist, it is readily available at little cost. Another advantage of this new system is that the PC's are still available to perform their normal functions yet also allow a unit to access the simulator at any time. The only coordination needed is dedicated access to as many PCs as necessary for your unit level. Now imagine the platoon leader who has an hour of downtime and can gain access to the company's two or three PCs to run platoon action on contact drills with his tank commanders.

The most challenging part of this proposal is the development of the software. In the past, some have suggested adopting existing battle simulation games like *Steel Panthers III* for military use. While these "games" have some merit, no existing game has all of the features desired in a combat trainer. Some features of a new simulator may include, real time and faster simultaneous execution (as opposed to turn based), grid-like battle maps or location translation to allow the use of military maps, realistic equipment and units, head-to-head or human-versus-artificial intelligence capability, and using obstacles and fires. Many of these features currently exist in tactical games. For example, *Steel Panthers III* uses existing pieces of Army and Marine equipment in realistic unit structures. Games like *Red Alert* use real-time execution. Therefore, the idea is to define the desired features and create a new simulation/game that incorporates them all.

An example of software already being modified for military needs and currently in use is the game *Steel Beasts 2* by eSim Games. This software is a very realistic M1A1 simulator for both gunnery and maneuver and it incorporates items like obstacles and fire support. The United States Military Academy (USMA) has worked with the manufacturer to incorporate custom scenarios into its game for military science classes, which are used in class during "Ground Maneuver Warfare II." The cadets begin by practicing missions in the classroom to learn the system and gain appreciation for the battlefield operating systems. Next, the cadets develop operations orders in class and then meet in a simulation room consisting of 10 PCs connected via Ethernet and six single channel and ground airborne radio systems to execute their plan. The cadets maneuver as a unit in a realistic scenario incorporating all of the battlefield operating systems without the cost of using real vehicles or traveling to a special simulations center. Once the mission is completed, the cadets use the game's playback feature to create an after-action review. This entire process is done twice during the 2-week course — once with a defensive operation, and once with an offensive operation. The value of this simulation in reinforcing the text-based learning of the classroom is immeasurable.

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Another example of simulation use at the USMA is incorporating the game *Army Operations* into the military science 102 classes, "Ground Maneuver Warfare I." Again, the cadets go through the process of developing operations orders and then executing their orders in a simulations classroom. The valuable lessons of fire and movement and synchronized planning are taught just as effectively in this environment as they are in the training area, and in this case, the cost was zero.

To keep the price tag of this new software low, market powers must be used to reduce expenses. One obvious method of reducing costs is to share the expense with the Marine Corps. Certainly, a simulator of this type would prove just as useful to them. Adding their equipment and littoral terrain to the simulator would not be difficult. The biggest way to reduce cost is to contract with a company and allow them to sell the simulator as a commercial game. The demand for military simulators in the civilian community is evinced by the popularity of games such as *Steel Panthers III*, *Panzer General*, and even *Army Operations*. A commercially available, tactical simulator/game actually used by the Armed Forces would be enormously popular. Armchair generals everywhere would rejoice.

If security concerns exist about simulator access, versions can be created with slight modifications, which are then marketed to civilians. Such an approach would allow the simulator to be developed with less expense since the developer could recoup some of its investment in the civilian market instead of charging the military the full cost. Once obtained, this software could be distributed to each battalion on CD-ROM for local use. This is the approach currently being used by 1st Armored Division and USMA with the *Steel Beasts* software. To obtain a superb simulator with custom specifications, these units combined spent approximately \$130,000. This is far less than the development costs for SIMNET and CCTT, yet is readily useable at battalion and below on existing equipment.

In conclusion, the ability to maneuver in the field most likely will not increase. Our combat leaders need more repetitions in a low-stress environment to gain tactical proficiency. The Army has apparently come to the same conclusion with the reorganization of its military education program for lieutenants through majors. The bottom line here is that units need easier access to realistic tactical simulators. Existing simulators require too much planning overhead to allow convenient access and often cost too much. A battalion commander needs the capability to run his company commanders through a battalion-level attack during an OPD without 3 months of planning. A PC-based simulator can provide this ability and do so at relatively low cost. Such a system can also be readily improved as PCs and LAN technology improves. The time has come to increase our repetitions using existing, low cost technology.

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### Live Fire Accuracy-Screening Test — Is It Necessary?

Dear Sir:

When the possibility of deployment was brought up a few months ago, one question resounded from several meetings, "Do we need to screen with service ammunition, and if so, how?"

The question as to whether or not to screen service rounds seems to originate from their increased accuracy over training rounds. As defined in U.S. Army Field Manual 3-20.12, the live fire accuracy-screening test (LFAST) is designed to "ensure tanks can fire accurately using the fleet zero computer correction factor method of calibration," not to evaluate the ballistic solution. Armament accuracy checks (AACs) for the M1A1, or the automatic ballistic solution check for the M1A2/SEP, one prerequisite for conducting the LFAST, more specifically check 5 — the ballistic solution checks — are conducted to ensure that the ballistic solutions are properly implemented for fire control components and all main gun ammunition.

The computer correction factor (CCF) refines ballistic solutions, is obtained from stationary tank firings, and corrects for mean jump. Mean jump is one of three fixed biases. A fixed bias, as defined by U.S. Army Armor Center's Master Gunner Branch, is "an error of the ammunition, weapons, and fire control system that at any given range will cause a round to miss the desired aiming point in a constant direction. These errors are predictable, and therefore can be compensated for." Mean jump is also defined by the Master Gunner Branch as "the average difference between the actual impact of a group of rounds, fired over many occasions, and the intended strike of those rounds, given that all inputs to the fire control system are correct or within tolerance." In short, screening evaluates that the tank can accurately fire using the fleet CCF and that mean jump is properly compensated for that specific vehicle. While it is true that service rounds are much more accurate than training, the LFAST is not designed to evaluate the accuracy of the round. Main gun rounds, especially service rounds, are put through a long, rigorous series of tests and evaluations and are accepted only when a very stringent accuracy tolerance is met.

Most failures of the LFAST that result in a discrete CCF are due to initial errors during boresighting, undetected mechanical failure, crew error, or errors that can occur due to tolerances in the muzzle boresight device (MBD). Prior to conducting the LFAST, crews must complete the following to ensure the tank is ready to conduct screening operations with minimal expenditure of rounds:

- A thorough preventive maintenance checks and services (PMCS), ensuring all deficiencies that may effect direct fire precision are corrected. This should be completed several days prior to departing the motor pool to allow time for parts to arrive.
- AACs for the M1A1; automatic ballistic solution check for M1A2/SEP.

- Prepare-to-fire checks. These are not meant to replace a thorough PMCS. They are specific checks, typically determined by the commander and the master gunner, that crews should perform just prior to live fire.

- Collimation check of the muzzle boresight device (MBD).

- Boresighting with collimated MBD, to include all manual input data such as CCFs, air temperature, ammunition temperature, and barometric pressure.

A great majority of current tankers have never fired service ammunition. They, along with the rest of us who fire training ammunition on a regular basis, are not accustomed to the increased shock of firing that type of ammunition. Additionally, anything that will give the crew added confidence in their weapons system makes them a more lethal, competent, and dependable crew.

As everyone is aware, we use plywood targets to screen prior to conducting live-fire tank tables at home station gunnery. So what type of material do we use when screening service ammunition and where do we get it? Plywood is fine for Sabot rounds because it is a kinetic energy round, but what about high explosive antitank (HEAT) rounds or multipurpose antitank (MPAT) ammunition? Will they detonate and destroy our normal thin plywood targets? The answer is yes.

Through some research, I have found that there are several different types of material that may be used for screening service HEAT or MPAT ammunition. As suggested in Master Gunner Newsletter 03-02, use target cloth (NSN 8305-00-285-2152). There are a couple of problems that may be encountered when using target cloth. First, it comes in three-foot wide rolls. The unit has to have the panels sewn into 10' X 10' panels. Second, because it is a cloth, the round rips through the target and, therefore, it may not leave an easily identifiable point of impact. You can purchase rolls of denim or similar material, but the same problems would be encountered.

For several years, Yuma Proving Grounds has used a material they describe as "sunshade." It is basically the same material used to make home window screens, but denser. It is a tightly woven, black, fiberglass mesh that is purchased locally from a provider in Yuma. Because the round is hot when it strikes the target, the round actually burns through the panel, leaving a clearly defined hole that can be easily seen with low power optics at 1500 meters.

Here is the process that should be followed if units would like to procure these panels. A unit representative should first contact a team leader for Yuma Proving Grounds' Automotive and Combat Systems Division for Direct Fire Weapons, at DSN 899-6492. He will then verify that enough material is on-hand to complete the order and get a price estimate. Once you have the price estimate, your S4 can initiate a military interdepartmental purchase request (MIPR). The S4 can contact Yuma's Direct Fire Weapons Department Logistics Co-

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ordinator at DSN 899-6205 for the information needed to complete the MIPR. The cost will be approximately \$1500 for 20 panels, which includes overnight shipping, if necessary. The material comes in six-foot rolls and is sewn together in their fabric shop. I would recommend that units order 11' by 11' panels to have some overage on either side for securing the panels to a frame.

Then there is the task of marking the panel. I made an illustration of the LFAST panel marked with measurements of the circle and crosshairs and took it to our local TSC. They then made a full-sized stencil out of a vinyl material. I then used regular white spray paint to mark the panel. Simply lay the panel on the ground, line up the stencil over it, and paint. Each panel requires one standard can of paint to be properly marked.

Prior to conducting the LFAST, the unit chain of command and the S4 must ensure that ammunition resupply is available and in sufficient quantity to replace the rounds fired from the unit's basic load prior to crossing the line of departure — prior to firing, confirm that there are no resupply constraints. Units may have to decrease the number of rounds fired to calculate a discrete CCF if there is insufficient service ammunition to conduct the LFAST. Finally, host nation environmental concerns about depleted uranium might hinder units from firing service Sabot. If this is the case, units will have to use the fleet CCF.

In the final analysis, screening is a necessary step in building combat power during reception, staging, onward movement, and integration. This will maintain the normal routine of gunnery preparation that all crews are accustomed to following. Most importantly, however, it will give the crews confidence that they will destroy what they engage. It confirms that their boresight is correct, that the breech works properly, it demonstrates the explosive power of the HEAT and/or MPAT round, and confirms that they are part of one of the most lethal combat platforms in the entire world.

SSG CHRISTOPHER M. QUILL  
1-66 Armor Master Gunner

### **14th Cavalry Association Reunion**

The 14th Cavalry Reunion will be held from 18 June through 22 June 2003 in Tacoma/Fort Lewis, Washington. The reunion is for all 14th Cavalry troops — Horse, WWII, Constabulary, ACR, and RSTA. Contact Frank Varljen at 703-791-6218 or e-mail at <f.varljen@verizon.net>.

### **USMC Vietnam Tankers Reunion**

The USMC Tankers Reunion will be held from 21 August through 23 August 2003 at the Doubletree Airport Hotel, Seattle, Washington. The arrival day is scheduled for 20 August and departure day is scheduled for 24 August. For more information, please contact Dick Carey at 278 Main Street, Mashpee, MA 02649, e-mail <warveteran@aol.com>, or call 508-477-5957.